

# **Inductors and transformers in integrated circuits**

## **Abstract**

Techniques for integrating multiple transformers are disclosed. Although they can be used in other areas, the techniques are particularly suitable in integrated circuits that are demanded to be of small in size. Several winding configurations of transformers are described and all are designed to not occupy multiple individual silicon spaces that would otherwise be occupied by the multiple transformers. Further, without the multiple individual silicon spaces for the transformers, the parasitic effects that would be otherwise introduced by the transformers in the multiple individual silicon spaces will be minimized. As a result, an integrated circuit chip employing transformers implemented in accordance with one of the techniques can accommodate much higher signal frequency, and have smaller size, thus the cost of the integrated circuit chip can be substantially reduced.